

IN THE SPECIFICATIONS

Please make the following changes to the specifications. A clean version of the specification is attached.

- [1] This application ~~is a divisional patent application claiming claims-priority to U.S. Nonprovisional Patent Application Serial No. 10/080,365, filed on February 21, 2003, which claims priority to~~ United Kingdom (GB) Patent Application Number 0105120.0 filed on 2 March 2001.

BACKGROUND OF THE INVENTION

- [2] The present invention relates to a mechanism for a vehicle door latch, ~~and particular mechanisms for use within vehicle door latches.~~

- [3] Known vehicle door latches are lockable using a “free wheeling” principle. Thus, with the door unlocked, lifting of an outside door handle causes the door latch to open. Conversely, with the door locked, lifting of the outside door handle is still possible but ~~the a~~ a transmission path between the outside door handle and components of the door latch which that retains the door in the closed position is broken. Essentially, a break is created in the transmission path. ~~These~~ The components on the door handle side of the break are caused to move with the door handle ~~and these~~ while the components on the other side of the break ~~are not caused to do not~~ move.

- [4] ———A problem with this type of locking is that a space has to be provided for these the components on the handle side of the break to move into ~~into~~ when the handle is lifted.

- [5] ~~Other known door locks include~~ In an effort to solve this problem, door locks have been developed that have levers which are positioned adjacent to each other, and which can be coupled and uncoupled to provide for different-selective functioning of the door lock. However, it has been known for these levers to may become artificially undesirably coupled to each other as a result of dirt, and dust ingress or in even-rusting of the levers. This undesired coupling presents safety issues because has safety implications since the latch mechanism can be in an apparently uncoupled state whereas when, in fact,

actuation of an input lever will cause operation of an output lever and unlocking of the door. ~~This is particularly so~~ Indeed, when the mechanism is used as part of a child safety mechanism on a vehicle to prevent a child from inadvertently opening the door, this coupling is particularly undesirable.

SUMMARY OF THE INVENTION

- [6] Thus, ~~according to the present invention there is provided a~~ An inventive latch mechanism ~~having~~ has an input ~~means-member~~ and an output ~~meansmember~~. ~~¶The latch mechanism having~~ has a first condition at which the input and output ~~means-member~~ are coupled such that movement of the input ~~means-member~~ from its first position to its second position causes movement of the output ~~means-member~~ from its first position to its second position. ~~¶The latch mechanism having~~ also has a second condition at which the input ~~means-member~~ is not coupled to the output ~~meansmember~~. ~~¶The latch mechanism further including~~ has a blocking ~~meansmember~~, which, with the mechanism in its second condition, further prevents one of the input or output ~~means-members~~ from moving to its respective second position.

BRIEF DESCRIPTION OF THE DRAWINGS

- [7] The invention will now be described, by way of example only, with reference to the accompanying drawings in which:
- [8] Figures 1A to 1D show a first embodiment of the present invention in various positions.
- [9] Figures 2A to 2D show a second embodiment of the present invention in various positions;
- [10] Figure 3 shows an isometric exploded view of ~~the second embodiment of Figures 2A to 2D~~ figure 2A; and.
- [11] Figures 4A ~~To~~ to 4D and 5A and 5D show isometric views of figure 2A to 2D respectively.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

- [12] With reference to figures 1A to 1D, there is shown a latch mechanism 10 mounted on a chassis 12 (only shown in figure 1A). ~~the~~ Latch mechanism 10 includes an input ~~means-member~~ in the form of an input lever 20, an output ~~means-member~~ in the form of a pin 30, a clutch ~~means~~ in the form of a link 40 and a blocking ~~means-member~~ 50.
- [13] Input ~~means-member~~ 20 is pivotally mounted at input pivot 21 to the chassis 12.

[14] ———Link 40 is pivotally mounted at pivot 41 to end 20B of input lever 20.

[15] ———Blocking ~~means~~ member 50 is fixed in a stationary position on chassis 12.

[16] Pin 30 is movable between the positions as shown in figure 1A and figure 1C. The Latch mechanism 10 ~~would~~ typically forms part of a vehicle door latch arrangement. An inside door handle and outside door handle are connected by a transmission path to end 20A of lever 20. Pin 30 is connected to a pawl, which is capable of retaining a latch bolt (e.g. a rotating claw) in a closed position. The claw in turn can releasably retain a latch striker in order to retain an associated door in a closed position. Movement of the pin 30 from the position shown in figure 1A to the position shown in figure 1C causes the pawl to disengage the claw and allow the door to open. Thus, with ~~the latch~~ mechanism 10 in the position as shown in figure 1A the door is in an unlocked condition. Operation of an inside or outside door handle will cause end 20A of lever 20 to lift (i.e. lever 20 will rotate in an anticlockwise direction) causing end 20B to lower, ~~which~~ This movement of end 20B results in abutment 42 contacting and then moving pin 30 to the position shown in figure 1C.

[17] ———It should be noted that in figure 1A and 1C pivot 41, abutment 42 and pin 30 are all aligned.

[18] The mechanism can be put into a locked condition as shown in figure 1B by rotating the link 40 so that it aligns with blocking ~~means~~ member 50 and no longer aligns with pin 30. Thus, ~~where~~ when an attempt is made to lift the outside door handle abutment 42 moves into contact with blocking ~~means~~ member 50, and the outside door handle cannot be fully lifted, ~~and~~ The door therefore remains fully closed.

[19] ~~However, thieves and the like tend to apply excessive force to outside door handles in the expectation of causing failing components of the door latch to fail in an attempt to gain entry to the vehicle. However, the present invention mitigates this problem, since in particular~~ In the event that blocking ~~means~~ member 50 fails (e.g., it breaks off chassis 12), ~~then the abutment 42 will be caused to bypass pin 30, and~~ Thus, the door still remains closed.

[20] ~~Thus, under normal circumstances, the abutment 42 does not enter the space occupied by blocking means~~ member 50. Thus, Consequently, this space is available for other components of the latch, enabling a more compact latch ~~to be designed~~ design.

~~Thus, typically~~ Preferably, blocking ~~means-member~~ 50 ~~is would~~ not solely be dedicated to acting just as a blocking ~~means-member~~, but ~~would~~ fulfills another function within the latch to further save space.

[21] With reference to figures 2A to 5C, there is shown a further embodiment of the invention. Latch mechanism 110 ~~with~~ has components ~~which~~ that fulfill substantially the same function as those in latch mechanism 10 ~~labelled 100~~ greater.

[22] Input lever 120 includes a hole 122, which mounts on input pivot pin 121, which, in turn, is mounted on chassis 112.

[23] ———Input lever 120 includes an L shaped hole 123 and a further hole 124 for connection to an inside door handle 200 or outside door handle 202.

[24] In this case, the output ~~means-member~~ is in the form of a output lever 130 having a pivot hole 131, which is mounted on pin 121. Thus, it can be seen that ~~the~~ input lever 120 and ~~the~~ output lever 130 lie adjacent to one another and pivot about the same axis. Lever 130 includes a slot 132, which in the position shown in ~~Figure 2A~~ Figure 2A, substantially aligns with leg 123A of L shaped hole 123. Output lever 130 further includes ~~an~~ abutment 133 and ~~an~~ arm 134.

[25] Blocking ~~means-member~~ 150 is in the form of a link being pivotally mounted on chassis 112 at pivot 152 and having ~~an~~ abutment 153. Adjacent abutment 153, there is a hole 154 in which is mounted pin 161 of link 160.

[26] ———Link 160 includes ~~at end 160A~~ a clutch means ~~at end 160A~~ in the form of a pin 140. Pin 140 engages in L shaped hole 123 of the input lever and also in slot 132 of the output lever.

[27] Pawl arm 170 is connected at end 170A to a pawl (not shown), which releasably retains a latch bolt (e.g. a rotating claw) to secure the door. Movement of the pawl arm 170 from the position shown in figure 4A to the position shown in figure 4C causes the pawl to rotate and allow the door to open.

[28] Operation of the mechanism is as follows.

[29] With the mechanism in the position as shown in figures 2A, 3A and 4A, ~~the~~ pin 140 is located at end 132A of ~~the~~ slot 132 and hence at end 125 of L shaped hole 123. As such, the input and output levers are coupled together for rotation. Further, ~~it can be as~~ seen from ~~Figure 2A~~ Figure 2A, ~~that~~ abutment 133 of ~~the~~ output lever 130 is not aligned with

abutment 153 of ~~the blocking means-member~~ (i.e., abutment 133, abutment 153 and pivot 152 are not aligned).

[30] ——— Thus, operation of an inside or outside door handle causes hole 124 to move in the direction of arrow A of ~~f~~Figure 2A to the position as shown in ~~f~~Figure 2C which results in arm 134 rotating pawl arm 170 and thus opening the door. It should be noted that abutment 133—has bypassed abutment 153 ~~when considering as shown in f~~Figure 2C.

[31] With the input and output levers in the position shown in ~~f~~Figure 2A, ~~the-block means-member~~ 150 can be rotated to the position as shown in ~~f~~Figure 2B. This has two effects, namely:

- a) Abutment 153 aligns with abutment 133 (i.e. abutments 153, 133 + and pivot 152 are aligned) to prevent movement of output lever 130;₂ and
- b) Pin 140 is moved (by link 160) to end 132B of ~~the~~ slot 132 and hence to the confluence of arms 123A and 123B of L shaped hole 123, i.e., to position 126 (see Figure 3).

[32] In the event that an inside or outside door handle is operated, ~~then~~ movement of ~~the~~ input lever 120 causes arcuate arm 123B of L shaped hole 123 to move past pin 140, which remains stationary. Compare figures 2B and 2D. Accordingly, if

[33] ——— ~~In the event that the input and outside levers corrode or otherwise stick together,~~ then the door is still prevented from opening by engagement between abutment 133 and 153. Under these circumstances, it is not possible to move the associated door handle and this acts as an indicator that the mechanism is malfunctioning. Such an indicator is useful since a malfunction can be determined simply by attempting to operate the door handles, ~~and~~ and ~~a~~ No internal examination of the door is required.

[34] The mechanism can be used in the transmission path between an outside door handle and a latch bolt (i.e., it can be used to lock the door).

[35] Alternatively, the mechanism can be used between both the inside and outside door handles and the latch bolt, i.e., it can be used to superlock (or deadlock) the door.

[36] Alternatively, it can be used between an inside door and a latch bolt, especially on a rear door of a vehicle, i.e. to provide a child safety function of the door latch.

IN THE CLAIMS:

1-23. (Cancelled)

24. (New) A latch mechanism, comprising:

an input member having a first input position and a second input position;

an output member having a first output position and a second output position;

a clutch, said clutch having a coupled condition and a decoupled condition, said coupled condition permitting movement of said input member from said first input position to said second input position to cause movement of said output member from said first output position to said second output position and said decoupled condition preventing movement of said input member from said first input position to said second input position from causing movement of said output member from said first output position to said second output position; and

a stationary blocking member blocking movement of at least one of said input member and said output member in said decoupled condition.

25. (New) A latch mechanism as defined in claim 24 in which said blocking member prevents said output member from moving to said second output position.

26. (New) A latch mechanism as defined in claim 25 in which said blocking member does not prevent said input member from moving to said second input position.

27. (New) A latch mechanism as defined in claim 24 in which said blocking member prevents said input member from moving to said second input position.

28. (New) A latch mechanism as defined in claim 27 in which said blocking member prevents said output member from moving to said second output position.

29. (New) A latch mechanism as defined in claim 24 in which said input member is rotatable about an input pivot between said first input position and said second input position.
30. (New) A latch mechanism as defined in claim 24 in which said output member is rotatable about an output pivot between said first output position and said second output position.
31. (New) A latch mechanism as defined in claim 24 in which said clutch rotates to coupled said input member and said output member.
32. (New) A latch mechanism as defined in claim 31 in which said clutch is pivotably mounted to said at least one of said input member and said output member.
33. (New) A latch mechanism as defined in claim 31 in which said clutch is pivotably mounted to said at least one of said input member and said output member.
34. (New) A latch mechanism as defined in claim 24 in which said input member is connectable to an inside door handle.
35. (New) A latch mechanism as defined in claim 24 in which said input member is connectable to an outside door handle.
36. (New) A latch mechanism as defined in claim 35 wherein in a coupled state said clutch translates upon movement of said input member between said first input position and said second input position to actuate said output member.
37. (New) The latch mechanism of Claim 24 wherein said blocking member is fixed against movement relative to at least one of a latch and vehicle chassis.

38. (New) A latch mechanism, comprising:
- an input member having a first input position and a second input position;
 - an output member having a first output position and a second output position;
 - a clutch, said clutch having a coupled condition and a decoupled condition, said coupled condition permitting movement of said input member from said first input position to said second input position to cause movement of said output member from said first output position to said second output position and said decoupled condition preventing movement of said input member from said first input position to said second input position from causing movement of said output member from said first output position to said second output position, said clutch being rotatable between said coupled and said decoupled position; and
 - a blocking member blocking movement of at least one of said input member and said output member in said decoupled condition.